

a worm closely allied to *Gordius*, found, in every instance, that after twenty-four hours the larvæ became more or less infected with these embryos, which had penetrated into their bodies; while the larvæ of *Yponomeuta* being transparent, enabled this sagacious observer to ascertain, by aid of the microscope, that they did not contain any of these embryos before the experiment of bringing the two into contact with each other was performed\*. Lespés also, while studying the *Termites*, found whole nests destroyed by the embryos of a Nematoid worm just like our microscopic *Filaria*, penetrating their bodies and becoming developed in the peritoneal cavity†, as in the instance above mentioned in *Nais*. If, after this, the origin and mode of introduction of *Dracunculus* into the human body be doubted, I can only reply, that I shall be happy to see a better explanation of it. The facts above stated appear to me as conclusive as those of *Cysticercus* producing *Tænia*, or tape-worm; and therefore it remains only to determine which of the microscopic *Filaria* produces *Dracunculus* in Bombay,—a point which the marked forms of these worms respectively might be expected to render not difficult of demonstration. Indeed, it so happens that the so-called “Tank-worm” (*Urolabes*‡ *palustris*, mihi), which I have taken from the “bathing-pool” of the school mentioned, as well as from other pools, tanks, and collections of dirty fresh water in the island generally, comes nearest to *Dracunculus*. The largest specimens are 1-6th of an inch long, bilabiate, with an exsertile, sharp-pointed œsophagus; the hepatic sheath ending some distance from the termination of the intestine; the vulva opens in the female a little in front of the middle of the body, and the anus posteriorly, just before the body terminates suddenly in a whip-like tail. The penis in the male is exsertile from the anus, *very nearly close* to the posterior extremity of the body, which is so obtuse as to be almost truncated. The tail of the young is semi-geniculated at the base, and there is a gland close to the anus, as in the young *Dracunculus*; that of the adult female varies in length, and becomes curved upon itself when short.

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XL.—*Synopsis of the Families, Genera, and Species of the British Actiniæ.* By P. H. GOSSE, F.R.S.

IN hac Synopsi includuntur tot species Zoophytorum Astræaceorum Britannicorum quot mihi adhuc cognitæ sunt. Desunt

\* Ann. des Sc. Nat. sér. 4. Zool. t. iv. p. 56, 1855.

† Annals, vol. xix. p. 388, 1857.

‡ “A holder-on by the tail,” which is a character common to all these microscopic *Filaria*.

nonnullæ, quas, imperite descriptas, vel dubias, non tentatum est generatim distribuere. Tribus CARYOPHYLLACEA ad monographiam futuram postponitur.

## ASTRÆACEA.

### Fam. I. Sagartiadæ.

Basis adhærens. Tentacula simplicia, in cyclis continuis digesta. Cutis, pro filis retractilibus armatis emittendis, perforata.

Gen. i. ACTINOLOBA (Blainv.). Basis integra, cyclica. Tentacula libenter et totaliter retractilia. Cutis acetabulis egens. Os (ut plurimum) unica canali gonidiali instructum.

1. *A. dianthus* (Ellis). Corpus læve, in impleto columniforme. Os valde sulcatum, sæpissime rufum. Tentacula albo-annulata.

Gen. ii. SAGARTIA (Gosse). Basis integra, cyclica. Tentacula libenter et totaliter retractilia. Cutis acetabulis instructa. Os duabus canalibus gonidialibus instructum.

2. *S. bellis* (Ellis). Discus crateriformis, sæpe undulatus, columna petiolo simulanti. Tentacula plurima, minima, in sex cyclis digesta.

3. *S. miniata* (Gosse). Tentacula, in fronte, duabus lineis subparallelis obscuris signata; in radice, area alba duas vittas nigras ferente: extima medulla coccinea.

4. *S. rosea* (Gosse). Tentacula rosea: intima nonnunquam duabus vittis nigris in imo signata.

5. *S. ornata* (Holdsworth). Tentaculorum radiorumque conjunctio nigricans: vitta alba cordeque albo signata. (*Hanc non vidi.*)

6. *S. ichthystoma* (Gosse). Tentacula minima, marginalia: duabus vittis nigris tenuibus signata.

7. *S. venusta* (Gosse). Discus aureus: tentacula nivea.

8. *S. nivea* (Gosse). Discus niveus: tentacula nivea.

9. *S. sphyrodeta* (Gosse). Tentacula pauca, crassa, nivea; cujusque radix intra anulum purpureum tenuem inclusa, qui in linea marginem versus exit.

10. *S. pallida* (Holdsworth). Tentacula pluria, tenuia, nivea; quodque inter duas lineas cæruleas arcuatas amplexatum.

11. *S. pellucida* (Alder). Prorsus pellucide alba. (*Hanc non vidi.*)

12. *S. coccinea* (Müller). Corpus rufum, albo-lineatum: tentacula pellucida albo-annulata, in imo vitta et duabus triangularibus maculis nigris signata.
13. *S. troglodytes* (Johnston). Tentacula in imo litera nigra B signata.
14. *S. viduata* (Müller). Tentacula tenuia, flexuosissima, linea obscura irrupta utrinque signata.
15. *S. parasitica* (Couch). Tentacula crassiora, linea obscura fracta utrinque signata.
16. *S. Yarrellii* (Cocks). Totaliter hyalina: columna lineis albis signata. Tentacula brevia, obtusa, punctis albis conspersa. (*Hanc non vidi.*)
17. *S. Alderi* (Cocks). Columna hyalina, lineis prasinis signata, quæ pone tentacula producuntur. Discus roseus. (*Hanc non vidi.*)
18. *S. Bellii* (Cocks). Columna, discus, tentaculaque hyalina, maculis flavis signata. Os aureum. (*Hanc non vidi.*)
19. *S. (?) chryso-splenium* (Cocks). Columna viridis, maculis flavis linealiter digestis signata. Tentacula annulis viridibus signata. (*Hanc non vidi.*)

Gen. iii. ADAMSIA (Forbes). Corpus valde depressum. Basis (ætate matura) annularis, ad conchas adhærens. Tentacula brevissima, difficiliter et haud omnino retractilia.

20. *A. palliata* (Boh.). Corpus striis sulcatum: maculis purpureis aspersum.

Gen. iv. AIPTASIA (Gosse). Corpus versatile, valde extensile. Tentacula longa, flexuosa, intima longissima, difficiliter et haud omnino retractilia.

21. *A. amacha* (Gosse). Fuliginosa; discus radiis glaucis vel cinereis signatus.

(N.B. Genera CAPNEA et CORYNACTIS in tribu CARYOPHYLLACEA collocantur.)

#### Fam. II. Actiniadæ.

Basis adhærens. Tentacula simplicia, in cyclis continuis digesta. Cutis lævis, acetabulis verrucis et cinclidibus egens.

Gen. v. ANTHEA (Johnston). Tentacula flexuosissima, difficiliter raroque retracta. Sphærulæ marginales nullæ.

22. *A. cereus* (Ellis). Tentacula tenuia, corpore longiora, teretia.

23. *A. Tuediæ* (Johnst.). Tentacula crassa, subacuta, corpore breviora, longitudinaliter sulcata. (*Hanc non vidi.*)

Gen. vi. ACTINIA (Linn.). Tentacula libenter et totaliter retractilia. Sphærulæ capsuliferæ ad disci marginem seriatæ.

24. *A. mesembryanthemum* (Ellis). Columna teres, obesa, mollis.

25. *A. margaritifera* (Templeton). Columna depressa, coriacea, transverse et longitudinaliter sulcata. (*Hanc non vidi.* An distincta a priori?)

### Fam. III. Bunodidæ.

Basis adhærens. Tentacula simplicia, in cyclis continuis digesta. Cutis imperforata, verrucis obruta.

Gen. vii. BUNODES (Gosse). Verrucæ teretes, non adhæsivæ, linealiter digestæ. Tentacula maculis definitis signata.

26. *B. clavata* (Thompson). Verrucæ subæquales, punctum rubrum ferentes. Discus tentaculaque punctis albis conspersa. Tentacula tenuiora, apicibus crispis.

27. *B. thallia* (Gosse). Verrucæ subæquales, thalassinæ in fundamine glauco. Tentacula crassa, obtusa, punctis albis sparse signata.

28. *B. gemmacea* (Ellis). Verrucæ magnæ parvæque in seriebus alternis. Columna griseo roseoque varia, sex tæniis albis signata. Tentacula crassa, obtusa, pellucida, in fronte purpurea, maculis ovalibus amplis albis signata.

Gen. viii. TEALIA (Gosse). Verrucæ cavatæ, adhæsivæ, indigeste sparsæ. Tentacula brevia, crassa, conica, sine maculis definitis. Cutis cartilaginea.

29. *T. crassicornis* (Müller). Columna rubro viridique varia, verrucis glaucis. Tentacula annulata.

30. *T. digitata* (Müller). Corpus miniatum, verrucis rufis. Tentacula unicolora. (*Hanc non vidi.*)

### Fam. IV. Ilyanthidæ.

Corporis extremitas inferior obtuse rotundata, sine basi adhærente. Tentacula simplicia, in uno vel pluribus cyclis continuis digesta. Cutis lævis, acetabulis verrucis et cinclidibus egens. Fossores, natatores, aut tubifices.

Gen. ix. ILYANTHUS (Forbes). Columna pyriformis, infra in punctum obtusum imperforatum attenuata. Tentacula sex et triginta aut plura, retractilia. Os simplex.

31. *I. Scoticus* (Forbes). Tentacula tenuia, filiformia, fere in-  
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star longitudinis columnæ: linea obscura signata. (*Hanc non vidi.*)

32. *I. Mitchellii* (Gosse). Tentacula crassa, conica, instar quartæ partis longitudinis columnæ: vittis transversis signata.

Gen. x. EDWARDSIA (Quatrefages). Columna vermiformis. Discus tentaculaque in apice cylindri retractilis posita. Pars inferior rara, inflata, translucida, retractilis, imperforata; media plus minusve epidermide opaco incrassata.

33. *E. callimorpha* (Gosse). Tentacula sexdecim, in unica serie digesta, marginalia, subcylindrica, duplo longiora quam cylindrus superior, hyalina, maculis et semi-annulis opacis albis signata.

34. *E. carnea* (Gosse). Tentacula quatuor et viginti, in tribus seriebus digesta, conica, acuta, instar dimidii longitudinis cylindri superioris, annulis carneis alternatis sub-opacis et pellucidis signata.

Gen. xi. HALCAMPÀ (Gosse). Columna tenuis, vermiformis. Discus tentaculaque retractilia sine cylindro speciali. Pars inferior rara, inflata, translucida, non retractilis, imperforata. Tentacula duodecim. Os simplex.

35. *H. chrysanthellum* (Peach). Tentacula cylindræa, obtusa, longitudine instar disci diametri; pellucida, vittis angulatis albis signata.

Gen. xii. PEACHIA (Gosse). Columna crassa, cylindræa vel pyriformis. Discus tentaculaque sine cylindro speciali. Extremitas inferior perforata. Tentacula duodecim, valde contractilia, nec retractilia. Canalis gonidialis unica, ala expansa, protrusili, fimbriata vel lobata instructa.

36. *P. cylindrica* (Reid). Ala gonidialis lobulis duodecim triangularibus miniatis incisa. (*Hanc non vidi.*)

37. *P. hastata* (Gosse). Ala gonidialis lobulis viginti papilliformibus brunneis incisa.

38. *P. undata* (Gosse). Ala gonidialis lobulis quinque quadratis albis incisa.

Gen. xiii. ARACHNACTIS (Blainv.). Columna cylindræa. Extremitas inferior imperforata. Tentacula pauca, in duabus seriebus digesta; exteriora longa, interiora brevia. Natat more Medusæ, per mare expansum.

39. *A. albida* (Forbes). Tentacula exteriora columna longiora, interiora instar quartæ ejusdem. (*Hanc non vidi.*)

Gen. xiv. CERIANTHUS (Delle Chiaje). Columna cylindræa,

vermiformis, veste membranacea tubulari induta. Extremitas inferior perforata. Tentacula plurima, in duabus seriebus digesta, exteriora longa, interiora brevia.

40. *C. membranaceus* (Gmelin). Semi-pedalis. Tentacula marginalia omnium longissima : annulata.

41. *C. (?) vermicularis* (Forbes). Semi-pollicaris. Cyclus tentaculorum mediocrius extra longissima. (Vestis non relata est.) (*Hanc non vidi.*)

Fam. V. *Lucernariadæ*.

Basis adhærens. Corpus crateriforme. Tentacula capitata, in octo fasciculos segregata. Discus octangularis.

Gen. xv. *DEPASTRUM* (Gosse). Corpus repente contractum, et supra et infra alvum. Tentaculorum fasciculi inter angulos disci positi, vix separati.

42. *D. cyathiforme* (Sars). Semipollicare. Brunneum.

Gen. xvi. *LUCERNARIA* (Müller). Corpus expansum supra, gradatim diminutum infra. Tentaculorum fasciculi in apicibus angulorum positi, remoti.

43. *L. campanulata* (Lamx.). Corpus campaniforme, profundum. Petiolus brevis. Colore hepatico.

44. *L. auricula* (Fabr.). Corpus expansum, umbelliforme, minime profundum. Petiolus instar corporis longitudine. Disci anguli æquidistantes. Interanguli (nonnunquam) sphæruis marginalibus instructi. Viridis vel rosea.

45. *L. quadricornis* (Müller). Corpus expansum, fere planum. Petiolus corpore multo longior. Disci anguli in paria conglutinati. Ligni-brunnea.

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Has species præcedentes, figuris illuminatis ad naturam depictis, in opere meo, 'Actinologia Britannica,' quod nunc in fasciculis bimestribus publicatur, illustrare propositum est.

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XLI.—*Note on the Cell-contents of Closterium.*

By ARTHUR HENFREY, F.R.S. &c.

THE remarkable movements occurring in the interior of the cell constituting the individual plant in the genus *Closterium* have attracted the attention of most physiologists, and have given rise to much discussion. Not very long ago, it was re-asserted that the movements were associated with the presence of cilia\* ;

\* Quarterly Journal of Microscopic Science, iii. p. 54, 1855.